

Division 1.4 explosives, compatibility group D, must be treated as 1.2D explosives. However, when 1.5D explosives are packed together with 1.2D explosives, the whole package must be treated as 1.1D explosives.

(3) Explosives of compatibility group S may be packaged together with explosives of any other compatibility group except A or L, and the combined package may be treated as belonging to any of the packaged compatibility groups except S.

(4) Explosives of compatibility group L shall only be packed with an identical explosive.

(5) Explosives articles of compatibility groups C, D, or E may be packed together and the entire package shall be treated as belonging to compatibility group E.

(6) Explosives articles of compatibility groups C, D, E, or N may be packed together and the entire package shall be treated as belonging to compatibility group D.

(7) Explosives substances of compatibility groups C and D may be packaged together and the entire package shall be treated as belonging to compatibility group D.

(8) Explosive articles of compatibility group G, except for fireworks and articles requiring special packaging, may be packaged together with explosive articles of compatibility groups C, D or E and the combined package shall be treated as belonging to compatibility group E.

[Amdt. 173-224, 55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 65 FR 50461, Aug. 18, 2000; 66 FR 33429, June 21, 2001; 66 FR 45381, Aug. 28, 2001; 69 FR 54046, Sept. 7, 2004; 73 FR 4717, Jan. 28 2008]

§ 173.62 Specific packaging requirements for explosives.

(a) Except as provided in §173.7 of this subchapter, when the §172.101 Table specifies that an explosive must be packaged in accordance with this section, only packagings which conform to the provisions of paragraphs (b) and (c) of this section or §173.7(e) of this subchapter and the applicable requirements in §§173.60 and 173.61 may be used unless otherwise approved by the Associate Administrator.

(b) *Explosives Table.* The Explosives Table specifies the Packing Instructions assigned to each explosive. Explosives are identified in the first column in numerical sequence by their identification number (ID #), which is listed in column 4 of the §172.101 table, of this subchapter. The second column of the Explosives Table specifies the Packing Instruction (PI) which must be used for packaging the explosive. The Explosives Packing Method Table in paragraph (c) of this section defines the methods of packaging. The Packing Instructions are identified using a 3 digit designation. The Packing Instruction prefixed by the letters "US" is particular to the United States and not found in applicable international regulations.

EXPLOSIVES TABLE

ID#	PI
UN0004	112
UN0005	130
UN0006	130
UN0007	130
UN0009	130
UN0010	130
UN0012	130
UN0014	130
UN0015	130
UN0016	130
UN0018	130
UN0019	130
UN0020	101
UN0021	101
UN0027	113
UN0028	113
UN0029	131
UN0030	131
UN0033	130
UN0034	130
UN0035	130
UN0037	130
UN0038	130
UN0039	130
UN0042	132
UN0043	133
UN0044	133
UN0048	130
UN0049	135
UN0050	135
UN0054	135
UN0055	136
UN0056	130
UN0059	137
UN0060	132
UN0065	139
UN0066	140
UN0070	134
UN0072	112(a)
UN0073	133
UN0074	110(a) or 110(b)
UN0075	115
UN0076	112
UN0077	114(a) or 114(b)
UN0078	112

EXPLOSIVES TABLE—Continued

ID#	PI
UN0079	112(b) or 112(c)
UN0081	116
UN0082	116 or 117
UN0083	116
UN0084	116
UN0092	135
UN0093	135
UN0094	113
UN0099	134
UN0101	140
UN0102	139
UN0103	140
UN0104	139
UN0105	140
UN0106	141
UN0107	141
UN0110	141
UN0113	110(a) or 110(b)
UN0114	110(a) or 110(b)
UN0118	112
UN0121	142
UN0124	US1
UN0129	110(a) or 110(b)
UN0130	110(a) or 110(b)
UN0131	142
UN0132	114(b)
UN0133	112(a)
UN0135	110(a) or 110(b)
UN0136	130
UN0137	130
UN0138	130
UN0143	115
UN0144	115
UN0146	112
UN0147	112(b)
UN0150	112(a) or 112(b)
UN0151	112
UN0153	112(b) or 112(c)
UN0154	112
UN0155	112(b) or 112(c)
UN0159	111
UN0160	114(b)
UN0161	114(b)
UN0167	130
UN0168	130
UN0169	130
UN0171	130
UN0173	134
UN0174	134
UN0180	130
UN0181	130
UN0182	130
UN0183	130
UN0186	130
UN0190	101
UN0191	135
UN0192	135
UN0193	135
UN0194	135
UN0195	135
UN0196	135
UN0197	135
UN0204	134
UN0207	112(b) or 112(c)
UN0208	112(b) or 112(c)
UN0209	112
UN0212	133
UN0213	112(b) or 112(c)
UN0214	112
UN0215	112
UN0216	112(b) or 112(c)
UN0217	112(b) or 112(c)

EXPLOSIVES TABLE—Continued

ID#	PI
UN0218	112(b) or 112(c)
UN0219	112
UN0220	112
UN0221	130
UN0222	112(b) or 112(c)
UN0224	110(a) or 110(b)
UN0225	133
UN0226	112(a)
UN0234	114(a) or 114(b)
UN0235	114(a) or 114(b)
UN0236	114(a) or 114(b)
UN0237	138
UN0238	130
UN0240	130
UN0241	116 or 117
UN0242	130
UN0243	130
UN0244	130
UN0245	130
UN0246	130
UN0247	101
UN0248	144
UN0249	144
UN0250	101
UN0254	130
UN0255	131
UN0257	141
UN0266	112
UN0267	131
UN0268	133
UN0271	143
UN0272	143
UN0275	134
UN0276	134
UN0277	134
UN0278	134
UN0279	130
UN0280	130
UN0281	130
UN0282	112
UN0283	132
UN0284	141
UN0285	141
UN0286	130
UN0287	130
UN0288	138
UN0289	139
UN0290	139
UN0291	130
UN0292	141
UN0293	141
UN0294	130
UN0295	130
UN0296	134
UN0297	130
UN0299	130
UN0300	130
UN0301	130
UN0303	130
UN0305	113
UN0306	133
UN0312	135
UN0313	135
UN0314	142
UN0315	142
UN0316	141
UN0317	141
UN0318	141
UN0319	133
UN0320	133
UN0321	130
UN0322	101

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EXPLOSIVES TABLE—Continued

ID#	PI
UN0323	134
UN0324	130
UN0325	142
UN0326	130
UN0327	130
UN0328	130
UN0329	130
UN0330	130
UN0331	116 or 117
UN0332	116 or 117
UN0333	135
UN0334	135
UN0335	135
UN0336	135
UN0337	135
UN0338	130
UN0339	130
UN0340	112(a) or 112(b)
UN0341	112(b)
UN0342	114(a)
UN0343	111
UN0344	130
UN0345	130
UN0346	130
UN0347	130
UN0348	130
UN0349	101
UN0350	101
UN0351	101
UN0352	101
UN0353	101
UN0354	101
UN0355	101
UN0356	101
UN0357	101
UN0358	101
UN0359	101
UN0360	131
UN0361	131
UN0362	130
UN0363	130
UN0364	133
UN0365	133
UN0366	133
UN0367	141
UN0368	141
UN0369	130
UN0370	130
UN0371	130
UN0372	141
UN0373	135
UN0374	134
UN0375	134
UN0376	133
UN0377	133
UN0378	133
UN0379	136
UN0380	101
UN0381	134
UN0382	101
UN0383	101
UN0384	101
UN0385	112(b) or 112(c)
UN0386	112(b) or 112(c)
UN0387	112(b) or 112(c)
UN0388	112(b) or 112(c)
UN0389	112(b) or 112(c)
UN0390	112(b) or 112(c)
UN0391	112(a)
UN0392	112(b) or 112(c)
UN0393	112(b)
UN0394	112(a)

EXPLOSIVES TABLE—Continued

ID#	PI
UN0395	101
UN0396	101
UN0397	101
UN0398	101
UN0399	101
UN0400	101
UN0401	112
UN0402	112(b) or 112(c)
UN0403	135
UN0404	135
UN0405	135
UN0406	114(b)
UN0407	114(b)
UN0408	141
UN0409	141
UN0410	141
UN0411	112(b) or 112(c)
UN0412	130
UN0413	130
UN0414	130
UN0415	143
UN0417	130
UN0418	135
UN0419	135
UN0420	135
UN0421	135
UN0424	130
UN0425	130
UN0426	130
UN0427	130
UN0428	135
UN0429	135
UN0430	135
UN0431	135
UN0432	135
UN0433	111
UN0434	130
UN0435	130
UN0436	130
UN0437	130
UN0438	130
UN0439	137
UN0440	137
UN0441	137
UN0442	137
UN0443	137
UN0444	137
UN0445	137
UN0446	136
UN0447	136
UN0448	114(b)
UN0449	101
UN0450	101
UN0451	130
UN0452	141
UN0453	130
UN0454	142
UN0455	131
UN0456	131
UN0457	130
UN0458	130
UN0459	130
UN0460	130
UN0461	101
UN0462	101
UN0463	101
UN0464	101
UN0465	101
UN0466	101
UN0467	101
UN0468	101
UN0469	101

EXPLOSIVES TABLE—Continued

ID#	PI
UN0470	101
UN0471	101
UN0472	101
UN0473	101
UN0474	101
UN0475	101
UN0476	101
UN0477	101
UN0478	101
UN0479	101
UN0480	101
UN0481	101
UN0482	101
UN0483	112(b) or 112(c)
UN0484	112(b) or 112(c)
UN0486	101
UN0487	135
UN0488	130
UN0489	112(b) or 112(c)
UN0490	112(b) or 112(c)
UN0491	143
UN0492	135
UN0493	135
UN0494	US1
UN0495	115
UN0496	112(b) or 112(c)
UN0497	115
UN0498	114(b)
UN0499	114(b)
UN0500	131
UN0501	114(b)
UN0502	130
UN0503	135
UN0504	112(c)
UN0505	135
UN0506	135
UN0507	135
UN0508	114(b)
UN0509	114(b)
NA0124	US1
NA0276	134
NA0323	134
NA0331	116 or 117
NA0337	135
NA0349	133
NA0494	US1

(c) Explosives must be packaged in accordance with the following table:

(1) The first column lists, in alpha-numeric sequence, the packing methods prescribed for explosives in the Explosives Table of paragraph (b) of this section.

(2) The second column specifies the inner packagings that are required. If inner packagings are not required, a notation of “Not necessary” appears in the column. The term “Not necessary” means that a suitable inner packaging may be used but is not required.

(3) The third column specifies the intermediate packagings that are required. If intermediate packagings are not required, a notation of “Not necessary” appears in the column. The term “Not necessary” means that a suitable intermediate packaging may be used but is not required.

(4) The fourth column specifies the outer packagings which are required. If inner packagings and/or intermediate packagings are specified in the second and third columns, then the packaging specified in the fourth column must be used as the outer packaging of a combination packaging; otherwise it may be used as a single packaging.

(5) Packing Instruction 101 may be used for any explosive substance or article if an equivalent level of safety is shown to be maintained subject to the approval of the Associate Administrator.

TABLE OF PACKING METHODS

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
101	This Packing Instruction may be used as an alternative to a specifically assigned packing method with the approval of the Associate Administrator prior to transportation. When this packing instruction is used, the following must be marked on the shipping documents: “Packaging approved by the competent authority of the United States of America (USA)”.		
PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:			
1. Samples of new or existing explosive substances or articles may be transported as directed by the Associate Administrator for purposes including: testing, classification, research and development, quality control, or as a commercial sample. Explosive samples which are wetted or desensitized must be limited to 25 kg. Explosive samples which are not wetted or desensitized must be limited to 10 kg in small packages as specified by the Associate Administrator for Hazardous Materials Safety			
110(a)	Bags	Bags	Drums.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <p>1. The Intermediate packagings must be filled with water saturated material such as an anti-freeze solution or wetted cushioning.</p> <p>2. Outer packagings must be filled with water saturated material such as an anti-freeze solution or wetted cushioning. Outer packagings must be constructed and sealed to prevent evaporation of the wetting solution, except when 0224 is being carried dry.</p>	<p>plastics, textile, plastic coated or lined. rubber textile, rubberized textile</p> <p>Receptacles wood</p>	<p>plastics, textile, plastic coated or lined. rubber textile, rubberized- Receptacles plastics metal wood</p>	<p>steel (1A1 or 1A2). other metal (1N1 or 1N2). plastics-(1H1 or 1H2).</p>
<p>110(b) PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS For UN 0074, 0113, 0114, 0129, 0130, 0135 and 0224, the following conditions must be satisfied: a. inner packagings must not contain more than 50 g of explosive substance (quantity corresponding to dry substance); b. each inner packaging must be separated from other inner packagings by dividing partitions; and c. the outer packaging must not be partitioned with more than 25 compartments</p>	<p>Bags rubber, conductive plastics, conductive Receptacles metal wood rubber, conductive plastics, conductive</p>	<p>Dividing partitions metal wood plastics fibreboard</p>	<p>Boxes. natural wood, sift-proof wall (4C2). plywood (4D). reconstituted wood (4F).</p>
<p>111 PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: For UN0159, inner packagings are not required when metal (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2) or plastics (1H1 or 1H2) drums are used as outer packagings.</p>	<p>Bags paper, water-proofed. plastics textile, rubberized Sheets plastics textile, rubberized Receptacles wood</p>	<p>Not necessary</p>	<p>Boxes. steel (4A). aluminum (4B). other metal (4N). natural wood, ordinary (4C1). natural wood, sift proof (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, expanded (4H1). plastics, solid (4H2). Drums steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiberboard (1G). plastics (1H1 or 1H2).</p>
<p>112(a)</p>	<p>Bags</p>	<p>Bags</p>	<p>Boxes.</p>

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. For UN Nos. 0004, 0076, 0078, 0154, 0219 and 0394, packagings must be lead free.</p> <p>2. Intermediate packagings are not required if leakproof drums are used as the outer packaging.</p> <p>3. For UN0072 and UN0226, intermediate packagings are not required.</p>	<p>paper, multiwall, water resistant.</p> <p>plastics</p> <p>textile</p> <p>textile, rubberized</p> <p>woven plastics</p> <p>Receptacles</p> <p>metal</p> <p>plastics</p> <p>wood</p>	<p>plastics</p> <p>textile, plastic coated or lined.</p> <p>Receptacles</p> <p>metal</p> <p>plastics</p> <p>wood</p>	<p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, expanded (4H1).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plywood (1D).</p> <p>fiber (1G).</p> <p>plastics (1H1 or 1H2).</p> <p>Boxes.</p> <p>woven plastics sift-proof (5H2/3).</p> <p>plastics, film (5H4).</p> <p>textile, sift-proof (5L2).</p> <p>textile, water resistant (5L3).</p> <p>paper, multiwall, water resistant (5M2).</p> <p>Boxes</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, expanded (4H1).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>plywood (1D).</p> <p>other metal (1N1 or 1N2).</p> <p>fiber (1G).</p> <p>plastics (1H1 or 1H2).</p> <p>Boxes.</p>
<p>112(b)</p> <p>This packing instruction applies to dry solids other than powders.</p> <p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. For UN 0004, 0076, 0078, 0154, 0216, 0219 and 0386, packagings must be lead free.</p> <p>2. For UN0209, bags, sift-proof (5H2) are recommended for flake or prilled TNT in the dry state and a maximum net mass of 30 kg..</p> <p>3. For UN0222, inner packagings are not required.</p>	<p>Bags</p> <p>paper, Kraft</p> <p>paper, multiwall, water resistant.</p> <p>plastics</p> <p>textile</p> <p>textile, rubberized</p> <p>plastics.</p> <p>woven plastics</p>	<p>Bags</p> <p>(for UN0150 only)</p> <p>plastics</p> <p>textile, plastic coated or lined.</p>	<p>Boxes.</p> <p>woven plastics sift-proof (5H2/3).</p> <p>plastics, film (5H4).</p> <p>textile, sift-proof (5L2).</p> <p>textile, water resistant (5L3).</p> <p>paper, multiwall, water resistant (5M2).</p> <p>Boxes</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, expanded (4H1).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>plywood (1D).</p> <p>other metal (1N1 or 1N2).</p> <p>fiber (1G).</p> <p>plastics (1H1 or 1H2).</p> <p>Boxes.</p>
<p>112(c) This packing instruction applies to solid dry powders.</p>	<p>Bags</p>	<p>Bags</p>	<p>Boxes.</p>

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. For UN 0004, 0076, 0078, 0154, 0216, 0219 and 0386, packagings must be lead free.</p> <p>2. For UN0209, bags, sift-proof (5H2) are recommended for flake or prilled TNT in the dry state. Bags must not exceed a maximum net mass of 30 kg..</p> <p>3. Inner packagings are not required if drums are used as the outer packaging..</p> <p>4. At least one of the packagings must be sift-proof.</p>	<p>paper, multiwall, water resistant.</p> <p>plastics</p> <p>woven plastics</p> <p>Receptacles</p> <p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p>	<p>paper, multiwall, water resistant with inner lining.</p> <p>plastics</p> <p>Receptacles</p> <p>metal</p> <p>plastics</p> <p>wood</p>	<p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums.</p> <p>plastics (1H1 or 1H2).</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plywood (1D).</p> <p>fiber (1G).</p>
<p>113 PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. For UN0094 and UN0305, no more than 50 g of substance must be packed in an inner packaging.</p> <p>2. For UN0027, inner packagings are not necessary when drums are used as the outer packaging.</p> <p>3. At least one of the packagings must be sift-proof.</p> <p>4. Sheets must only be used for UN0028</p>	<p>Bags</p> <p>paper</p> <p>plastics</p> <p>textile, rubberized</p> <p>Receptacles</p> <p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p> <p>Sheets</p> <p>paper, kraft</p> <p>paper, waxed</p>	<p>Not necessary</p>	<p>Boxes.</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>natural wood, ordinary (4C1).</p> <p>natural wood, sift-proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums</p> <p>plastics (1H1 or 1H2).</p> <p>steel (1A1 or 1A2).</p> <p>aluminum-(1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plywood (1D).</p> <p>fiber (1G).</p>
114(a)	Bags	Bags	Boxes

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>This packing instruction applies to wetted solids PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: 1. For UN 0077, 0234, 0235 and 0236, packagings must be lead free. 2. For UN0342, inner packagings are not required when metal (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2) or plastics (1H1 or 1H2) drums are used as outer packagings. 3. Intermediate packagings are not required if leakproof removable head drums are used as the outer packaging.</p>	<p>plastics textile woven plastics Receptacles metal plastics wood</p>	<p>plastics textile, plastic coated or lined. Receptacles metal plastics Dividing partitions wood</p>	<p>steel (4A). other metal (4N). natural wood, ordinary (4C1). natural wood, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, solid (4H2). Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).</p>
<p>114(b) PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS: 1. For UN Nos. 0077, 0132, 0234, 0235 and 0236, packagings must be lead free. 2. For UN0160 and UN0161, when metal drums (1A2, 1B2 or 1N2) are used as the outer packaging, metal packagings must be so constructed that the risk of explosion, by reason of increased internal pressure from internal or external causes, is prevented. 3. For UN0160, UN0161, and UN0508, inner packagings are not necessary if drums are used as the outer packaging. 4. For UN0508 and UN0509, metal packagings must not be used.</p>	<p>Bags paper, kraft plastics textile, sift-proof .. woven plastics, sift-proof.. Receptacles fiberboard metal paper plastics wood woven plastics, sift-proof..</p>	<p>Not necessary</p>	<p>Boxes natural wood, ordinary (4C1). natural wood, sift-proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).</p>
115	Receptacles	Bags	Boxes

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. For liquid explosives, inner packagings must be surrounded with non-combustible absorbent cushioning material in sufficient quantity to absorb the entire liquid content. Metal receptacles should be cushioned from each other. The net mass of explosive per package may not exceed 30 kg when boxes are used as outer packaging. The net volume of explosive in each package other than boxes must not exceed 120 liters.</p> <p>2. For UN 0075, 0143, 0495 and 0497 when boxes are used as the outer packaging, inner packagings must have taped screw cap closures and be not more than 5 liters capacity each. A composite packaging consisting of a plastic receptacle in a metal drum (6HA1) may be used in lieu of combination packagings. Liquid substances must not freeze at temperatures above -15 °C (+5 °F).</p> <p>3. For UN0144, intermediate packagings are not necessary. Aluminum drums (1B1 and 1B2) and metal, other than steel or aluminum, drums (1N1 and 1N2) must not be used..</p>	<p>metal</p> <p>plastics</p> <p>wood</p>	<p>plastics in metal receptacles.</p> <p>Drums</p> <p>metal</p> <p>Receptacles</p> <p>wood</p>	<p>natural wood, ordinary (4C1).</p> <p>natural wood, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>Drums.</p> <p>plastics (1H1 or 1H2).</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plywood (1D).</p> <p>fiber (1G).</p> <p>Specification MC-200 containers may be used for transport by motor vehicle.</p>
<p>116</p> <p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. For UN 0082, 0241, 0331 and 0332, inner packagings are not necessary if leakproof removable head drums are used as the outer packaging.</p> <p>2. For UN 0082, 0241, 0331 and 0332, inner packagings are not required when the explosive is contained in a material impervious to liquid.</p> <p>3. For UN0081, inner packagings are not required when contained in rigid plastic that is impervious to nitric esters.</p> <p>4. For UN0331, inner packagings are not required when bags (5H2), (5H3) or (5H4) are used as outer packagings.</p> <p>5. Bags (5H2 or 5H3) must be used only for UN0082, 0241, 0331 and 0332.</p> <p>6. For UN0081, bags must not be used as outer packagings.</p>	<p>Bags</p> <p>Bags</p> <p>paper, water and oil.</p> <p>resistant</p> <p>plastics</p> <p>textile, plastic coated or.</p> <p>lined</p> <p>woven plastics, sift-proof.</p> <p>Receptacles</p> <p>fiberboard, water resistant.</p> <p>metal</p> <p>plastics</p> <p>wood, sift-proof ...</p> <p>Sheets</p> <p>paper, water resistant.</p> <p>paper, waxed</p> <p>plastics</p>	<p>Not Necessary</p> <p>Not necessary</p>	<p>Bags</p> <p>Bags.</p> <p>woven plastics (5H1/2/3).</p> <p>paper, multiwall, water resistant (5M2).</p> <p>plastics, film (5H4).</p> <p>textile, sift-proof (5L2).</p> <p>textile, water resistant (5L3).</p> <p>Boxes.</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>wood, natural, ordinary (4C1).</p> <p>natural wood, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums.</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plywood (1D).</p> <p>fiber (1G).</p> <p>plastics (1H1 or 1H2).</p> <p>Jerricans.</p> <p>steel (3A1 or 3A2).</p> <p>plastics (3H1 or 3H2).</p>
<p>117</p>	<p>Not necessary</p>	<p>Not necessary</p>	<p>IBCs.</p>

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. This packing instruction may only be used for explosives of UN0082 when they are mixtures of ammonium nitrate or other inorganic nitrates with other combustible substances that are not explosive ingredients. Such explosives must not contain nitroglycerin, similar liquid organic nitrates, liquid or solid nitrocarbons, or chlorates..</p> <p>2. This packing instruction may only be used for explosives of UN0241 that consist of water as an essential ingredient and high proportions of ammonium nitrate or other oxidizers, some or all of which are in solution. The other constituents may include hydrocarbons or aluminum powder, but must not include nitro-derivatives such as trinitrotoluene..</p> <p>3. Metal IBCs must not be used for UN0082 and UN 0241..</p> <p>4. Flexible IBCs may only be used for solids.</p> <p>130 Not necessary Not necessary Boxes.</p> <p>Particular Packaging Requirements:</p> <p>1. The following applies to UN 0006, 0009, 0010, 0015, 0016, 0018, 0019, 0034, 0035, 0038, 0039, 0048, 0056, 0137, 0138, 0168, 0169, 0171, 0181, 0182, 0183, 0186, 0221, 0238, 0243, 0244, 0245, 0246, 0254, 0280, 0281, 0286, 0287, 0297, 0299, 0300, 0301, 0303, 0321, 0328, 0329, 0344, 0345, 0346, 0347, 0362, 0363, 0370, 0412, 0424, 0425, 0434, 0435, 0436, 0437, 0438, 0451, 0459 and 0488.</p> <p>Large and robust explosives articles, normally intended for military use, without their means of initiation or with their means of initiation containing at least two effective protective features, may be carried unpackaged. When such articles have propelling charges or are self-propelled, their ignition systems must be protected against stimuli encountered during normal conditions of transport. A negative result in Test Series 4 on an unpackaged article indicates that the article can be considered for transport unpackaged. Such unpackaged articles may be fixed to cradles or contained in crates or other suitable handling devices.</p> <p>2. Subject to approval by the Associate Administrator, large explosive articles, as part of their operational safety and suitability tests, subjected to testing that meets the intentions of Test Series 4 of the UN Manual of Tests and Criteria with successful test results, may be offered for transportation in accordance with the requirements of this subchapter.</p> <p>131 Bags Not Necessary Boxes</p>			<p>metal (11A), (11B), (11N), (21A), (21B), (21N), (31A), (31B), (31N), flexible (13H2), (13H3), (13H4), (13L2), (13L3), (13L4), (13M2), rigid plastics (11H1), (11H2), (21H1), (21H2), (31H1), (31H2), composite (11HZ1), (11HZ2), (21HZ1), (21HZ2), (31HZ1), (31HZ2).</p> <p>Boxes.</p> <p>Steel (4A).</p> <p>Aluminum (4B).</p> <p>Wood natural, ordinary (4C1).</p> <p>Wood natural, sift-proof walls (4C2).</p> <p>Plywood (4D).</p> <p>Reconstituted wood (4F).</p> <p>Fiberboard (4G).</p> <p>Plastics, expanded (4H1).</p> <p>Plastics, solid (4H2).</p> <p>Drums.</p> <p>Steel, removable head (1A2).</p> <p>Aluminum, removable head (1B2).</p> <p>Plywood (1D).</p> <p>Fiber (1G).</p> <p>Plastics, removable head (1H2).</p> <p>Large Packagings.</p> <p>Steel (50A).</p> <p>Aluminum (50B).</p> <p>Metal other than steel or aluminum (50N).</p> <p>Rigid plastics (50H).</p> <p>Natural wood (50C).</p> <p>Plywood (50D).</p> <p>Reconstituted wood (50F).</p> <p>Rigid fiberboard (50G).</p>

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <p>1. For UN 0029, 0267 and 0455, bags and reels may not be used as inner packagings.</p> <p>2. For UN 0030, 0255 and 0456, inner packagings are not required when detonators are packed in pasteboard tubes, or when their leg wires are wound on spools with the caps either placed inside the spool or securely taped to the wire on the spool, so as to restrict free moving of the caps and to protect them from impact forces.</p> <p>3. For UN 0360, 0361 and 0500, detonators are not required to be attached to the safety fuse, metal-clad mild detonating cord, detonating cord, or shock tube. Inner packagings are not required if the packing configuration restricts free moving of the caps and protects them from impact forces.</p>	<p>paper</p> <p>plastics</p> <p>Receptacles</p> <p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p> <p>Reels</p>		<p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>wood, natural, ordinary (4C1).</p> <p>natural wood, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>Drums.</p> <p>steel (1A1 or 1A2).</p> <p>Aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>Plywood (1D).</p> <p>fiber (1G).</p> <p>plastics (1H1 or 1H2).</p>
<p>132(a)</p> <p>For articles consisting of closed metal, plastic or fiberboard casings that contain detonating explosives, or consisting of plastics-bonded detonating explosives.</p>	Not necessary	Not necessary	<p>Boxes</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>wood, natural; ordinary (4C1).</p> <p>wood, natural, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p>
<p>132(b)</p> <p>For articles without closed casings</p>	<p>Receptacles</p> <p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p> <p>Sheets</p> <p>paper</p> <p>plastics</p>	Not necessary	<p>Boxes</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>wood, natural, ordinary (4C1).</p> <p>wood, natural, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p>
<p>133</p> <p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <p>1. For UN 0043, 0212, 0225, 0268 and 0306 trays are not authorized as inner packagings.</p>	<p>Receptacles</p> <p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p> <p>Trays, fitted with dividing partitions fiberboard plastics wood</p>	<p>Intermediate packagings are only required when trays are used as inner packagings..</p> <p>Receptacles</p> <p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p>	<p>Boxes.</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>wood, natural, ordinary (4C1).</p> <p>wood, natural, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p>
134	Bags	Not necessary	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
.....	water resistant Receptacles fiberboard metal plastics wood Sheets fiberboard, cor- rugated. Tubes fiberboard		steel (4A). aluminum (4B). other metal (4N). wood, natural, or- dinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, ex- panded (4H1). plastics, solid (4H2). Drums. fiberboard (1G). plastics (1H1 or 1H2). steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D).
135	Bags	Not necessary	Boxes.
.....	paper plastics Receptacles fiberboard metal plastics wood Sheets paper plastics		steel (4A). aluminum (4B). other metal (4N). wood, natural, or- dinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, ex- panded (4H1). plastics, solid (4H2). Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).
136	Bags	Not necessary	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
.....	plastics textile Boxes. fiberboard plastics wood Dividing partitions in the outer pack- agings		steel (4A). aluminum (4B). other metal (4N). wood, natural, or- dinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, solid (4H2). Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).
137 PARTICULAR PACKING REQUIREMENTS OR EX- CEPTIONS: For UN 0059, 0439, 0440 and 0441, when the shaped charges are packed singly, the conical cavity must face downwards and the package marked "THIS SIDE UP". When the shaped charges are packed in pairs, the conical cavities must face in- wards to minimize the jetting effect in the event of accidental initiation.	Bags plastics Boxes fiberboard wood Tubes fiberboard metal plastics Dividing partitions in the outer pack- agings	Not necessary	Boxes. steel (4A). aluminum (4B). other metal (4N). wood, natural, or- dinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).
138	Bags	Not necessary	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>If the ends of the articles are sealed, inner packagings are not necessary.</p>	Plastics		<p>steel (4A). aluminum (4B). other metal (4N). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, solid (4H2).</p> <p>Drums. fiberboard (1G). plastics (1H1 or 1H2). steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2).</p>
<p>139 PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. For UN 0065, 0102, 0104, 0289 and 0290, the ends of the detonating cord must be sealed, for example, by a plug firmly fixed so that the explosive cannot escape. The ends of CORD DETONATING flexible must be fastened securely.</p> <p>2. For UN0065 and UN0289, inner packagings are not required when they are fastened securely in coils.</p>	<p>Bags plastics Receptacles fiberboard metal plastics wood Reels Sheets paper plastics</p>	Not necessary	<p>Boxes. steel (4A). aluminum (4B). other metal (4N). wood, natural, ordinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, solid (4H2).</p> <p>Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).</p>
140	Bags	Not necessary	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:.</p> <p>1. If the ends of UN0105 are sealed, no inner packagings are required.</p> <p>2. For UN0101, the packaging must be sift-proof except when the fuse is covered by a paper tube and both ends of the tube are covered with removable caps.</p> <p>3. For UN0101, steel or aluminum boxes or drums must not be used.</p>	<p>plastics</p> <p>Reels</p> <p>Sheets</p> <p>paper, kraft</p> <p>plastics</p> <p>Receptacles</p> <p>wood</p>		<p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>wood, natural, ordinary (4C1).</p> <p>wood, natural, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums.</p> <p>plastics (1H1 or 1H2).</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plywood (1D).</p> <p>fiber (1G).</p>
141	<p>Receptacles</p> <p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p> <p>Trays, fitted with dividing partitions</p> <p>plastics</p> <p>wood</p> <p>Dividing partitions in the outer packagings</p>	Not necessary	<p>Boxes.</p> <p>steel (4A).</p> <p>aluminum (4B).</p> <p>other metal (4N).</p> <p>wood, natural, ordinary (4C1).</p> <p>wood, natural, sift proof walls (4C2).</p> <p>plywood (4D).</p> <p>reconstituted wood (4F).</p> <p>fiberboard (4G).</p> <p>plastics, solid (4H2).</p> <p>Drums.</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plywood (1D).</p> <p>fiber (1G).</p> <p>plastics (1H1 or 1H2).</p>
142	Bags	Not necessary	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
.....	paper plastics Receptacles fiberboard metal plastics wood Sheets paper Trays, fitted with di- viding partitions plastics		steel (4A). aluminum (4B). other metal (4N). wood, natural, or- dinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, solid (4H2). Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).
143 PARTICULAR PACKING REQUIREMENTS OR EX- CEPTIONS: 1. For UN 0271, 0272, 0415 and 0491 when metal packagings are used, metal pack- agings must be so constructed that the risk of explosion, by reason of increase in inter- nal pressure from internal or external causes is prevented. 2. Composite packagings (6HH2) (plastic re- ceptacle with outer solid box) may be used in lieu of combination packagings.	Bag paper, kraft plastics textile textile, rubberized Receptacles fiberboard metal plastics wood Trays, fitted with di- viding partitions plastics wood	Not necessary	Boxes. steel (4A). aluminum (4B). other metal (4N). wood, natural, or- dinary (4C1). wood, natural, sift proof walls (4C2). plywood (4D). reconstituted wood (4F). fiberboard (4G). plastics, solid (4H2). Drums. steel (1A1 or 1A2). aluminum (1B1 or 1B2). other metal (1N1 or 1N2). plywood (1D). fiber (1G). plastics (1H1 or 1H2).
144	Receptacles	Not necessary	Boxes.

TABLE OF PACKING METHODS—Continued

Packing instruction	Inner packagings	Intermediate packagings	Outer packagings
<p>PARTICULAR PACKING REQUIREMENTS OR EXCEPTIONS:</p> <p>For UN0248 and UN 0249, packagings must be protected against the ingress of water. When CONTRIVANCES, WATER ACTIVATED are transported unpackaged, they must be provided with at least two independent protective features that prevent the ingress of water.</p>	<p>fiberboard</p> <p>metal</p> <p>plastics</p> <p>wood</p> <p>Dividing partitions in the outer packagings</p>		<p>steel (4A).</p> <p>aluminum (4B)</p> <p>other metal (4N).</p> <p>wood, natural, ordinary (4C1)</p> <p>with metal liner.</p> <p>plywood (4D) with metal liner.</p> <p>reconstituted wood (4F) with metal liner.</p> <p>plastics, expanded (4H1).</p> <p>plastics, solid (4H2).</p> <p>Drums.</p> <p>steel (1A1 or 1A2).</p> <p>aluminum (1B1 or 1B2).</p> <p>other metal (1N1 or 1N2).</p> <p>plastics (1H1 or 1H2).</p> <p>plywood (1D).</p>

[Amdt. 173–260, 62 FR 24720, May 6, 1997]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 173.62, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.fdsys.gov.

§ 173.63 Packaging exceptions.

(a) Cord, detonating (UN 0065), having an explosive content not exceeding 6.5 g (0.23 ounces) per 30 centimeter length (one linear foot) may be offered for transportation domestically and transported as Cord, detonating (UN 0289), Division 1.4 Compatibility Group D (1.4D) explosives, if the gross weight of all packages containing Cord, detonating (UN 0065), does not exceed 45 kg (99 pounds) per:

- (1) Transport vehicle, freight container, or cargo-only aircraft;
- (2) Off-shore down-hole tool pallet carried on an off-shore supply vessel;
- (3) Cargo compartment of a cargo vessel; or
- (4) Passenger-carrying aircraft used to transport personnel to remote work sites, such as offshore drilling units.

(b) *Limited quantities of Cartridges, small arms, Cartridges, power devices, Cartridges for tools, blank, and Cases, cartridge, empty with primer.* (1)(i) Cartridges, small arms, Cartridges, power devices, Cartridges for tools, blank, and Cases, cartridge, empty with primer that have been classed as Division

1.4S explosive may be offered for transportation and transported as limited quantities when packaged in accordance with paragraph (b)(2) of this section. Packages containing such articles may be marked with either the marking prescribed in § 172.315(a) or (b) of this subchapter and offered for transportation and transported by any mode. For transportation by aircraft, the package must conform to the applicable requirements of § 173.27 of this part. In addition, packages containing such articles offered for transportation by aircraft must be marked with the proper shipping name as prescribed in the § 172.101 Hazardous Materials Table of this subchapter. Packages containing such articles are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or is offered for transportation and transported by